WHAT IS CLAIMED IS:

1. A gateway, comprising:

a first interface which communicates with information appliances connected to an internal network;

a second interface which communicates with information appliances connected to an external network; and

a controller which, if a control request with respect to either of the information appliances connected to the internal network is received from the information appliances connected to the external network, requests a function performance to a corresponding information appliance through the first interface according to requested control contents.

2. The gateway as claimed in claim 1, wherein the controller includes:

a DHCP server which allocates and manages different private IP addresses in accordance with a private IP address allocation request from the information appliances connected to the internal network, and receives host names from the information appliances allocated with the private IP addresses;

a DNS server which builds a database in order for the host names and the private IP addresses to be associated in response to an update request from the DHCP server; and

an application proxy server which transmits a list of the information appliances connected to the internal network in accordance with an access request of the information appliances connected to the external network, and transmits contents which control an information appliance selected from the transmitted list, and, if a control command is transmitted, requests a function performance to a corresponding information appliance according to the requested control command.

3 The gateway as claimed in claim 2, wherein the private IP addresses allocated to the information appliances connected to the internal network by the DHCP are the C class addresses defined by the Internet Assigned Numbers Authority (IANA).

4. The gateway as claimed in claim 2, wherein the DNS server builds the database by combining a domain name of the gateway and the host names of the information appliances connected to the internal network at a home, the domain name being registered in advance in an authorized DNS server connected to the external network.

5. The gateway as claimed in claim 4, wherein the DNS server, if any one of the information appliances connected to the internal network makes an inquiry about a private IP address through the host name with respect to another appliance connected to the internal network, provides the requested private IP address with reference to the database.

6. The gateway as claimed in claim 2, wherein the DNS server, if any one of the information appliances connected to the internal network makes an inquiry about a public IP address through the domain name with respect to an information appliance connected to the external network, provides the requested public IP address through an inquiry about the public IP address to an authorized DNS server connected to the external network.

7. The gateway as claimed in claim 2, wherein the application proxy server, if a response to the control request is transmitted from the corresponding control-requested information appliance connected to the internal network, notifies the response result to the control-requesting information appliance connected to the external network.

8. The gateway as claimed in claim 2, wherein the DHCP server, if an interruption request of the use of a private IP address is transmitted from an information appliance connected to the internal network, requests the DNS server to delete the private IP address of the corresponding information appliance and contents related to the host name from the database.

9. The gateway as claimed in claim 1, wherein the controller, if a data packet to be transmitted from one of the information appliances connected to the internal network to one of the information appliances connected to the external network is transferred to the first interface, changes an origination address and a port from a private IP address and a port to a public IP address and a port of the gateway to be outputted to the external

network through the second interface, and, if a data packet having a destination address and a port as the public IP address of the gateway is transferred from the external network to the second interface in response to the output, changes the public IP address and the port to the private IP address and the port of the corresponding information appliance to be outputted through the first interface.

10. A method for operating a gateway having a first interface which communicates with information appliances connected to an internal network, a second interface which communicates with information appliances connected to an external network, and a controller which communicates with the information appliances connected to the internal and the external networks, comprising steps of:

providing information on the information appliances connected to the internal network if an access request is transmitted from an information appliance connected to the external network; and

requesting a function performance to an appliance according to requested control contents if a control request with respect to the information appliances connected to the internal network is received from the information appliance connected to the external network.

11. The method as claimed in claim 10, wherein the step for providing the information on the information appliances connected to the

internal network in response to the access request from the information appliance connected to the external network includes steps of:

providing a list of the information appliances connected to the internal network; and

providing, if any one of the information appliances is selected from the provided list, contents for controlling the selected information appliance.

12. The method as claimed in claim 10, further comprising a step of, if a response according to the request of the function performance from the information appliance connected to the internal network is transferred, transmitting a result to the control-requesting information appliance connected to the external network.

13. The method as claimed in claim 10, further comprising a step of registering a domain name of the gateway and a public IP address of a system to be associated to each other on an initialization of the system, the domain name being registered in advance in a DNS server authorized in the external network.

14. The method as claimed in claim 13, further comprising steps of:

allocating, if the public IP address of the system is registered in the authorized DNS server connected to the external network, different private IP

addresses in response to requests of private IP address allocations from the information appliances connected to the internal network; and

receiving host names from the information appliances allocated with the private IP addresses and connected to the internal network, and building a database in order for the private IP addresses and the host names to be associated to each other.

15. The method as claimed in claim 14, wherein the private IP addresses allocated to the information appliances have C class address formats defined by Internet Assigned Numbers Authority (IANA).

16. The method as claimed in claim 14, wherein the step for building the database builds the database in names combined with the domain name of the gateway registered in advance in the authorized DNS server connected to the external network and the host names of the respective information appliances connected to the internal network.

17. The method as claimed in claim 14, further comprising a step of providing, if an inquiry about a public IP address is made through the domain name with respect to the information appliances connected to the external network from an information appliance connected to the internal network at a home, the public IP address through an inquiry to the authorized DNS server connected to the external network.

18. The method as claimed in claim 17, further comprising steps of:

changing, if a data packet to be transmitted from the information appliance receiving the public IP address of the information appliance connected to the external network to the external information appliances connected to the external network is transferred to the first interface, origination address and port from private IP address and port to public IP address and port of the gateway, and outputting the changed origination address and port to the external network through the second interface; and

changing, if a data packet having the public IP address of the gateway as destination address and port is transferred to the second interface from the external network in response to the data packet, the public IP address and port into the private IP address and port of a corresponding information appliance connected to the internal network, and outputting the converted private IP address and port through the first interface.

19. The method as claimed in claim 14, further comprising a step of providing, if a private IP address is inquired through a host name from any one of the information appliances connected to the internal network with respect to information appliances connected to an internal network at another home, a requested private IP address with reference to the database.

20. The method as claimed in claim 14, further comprising a step of deleting, if an interruption request of the use of a private IP address is transferred to the first interface from an information appliance connected to

the internal network, the private IP address and contents of a host name of a corresponding information appliance from the built database.